OFFICE OF
RIVER PROTECTION
United States Department of Energy

Hanford Advisory Board

Agency Update

for the

Office of River Protection

Presented by: Bill Hamel, Assistant Manager, WTP Project
U.S. Department of Energy, Office of River Protection

June 8, 2016

Our Mission and Vision

Our Mission

To safeguard the nuclear waste stored in Hanford's 177 underground tanks, and to manage the waste safely and responsibly until it can be treated in the Waste Treatment and Immobilization Plant for final disposition.

Vision

To be a high-performing, innovative organization that is safety-conscious and employee-focused, and committed to achieving our mission with environmental and fiscal responsibility.

Our Team

Office of River Protection (ORP)

ORP is responsible for planning, integrating, and managing the River Protection Program executed by contractors performing work under ORP management. ORP has 225 employees*, both federal and contractor.

Washington River Protection Solutions (WRPS)

WRPS is the prime contractor responsible for safely managing and operating the Tank Farms. WRPS has 2,054 employees*.

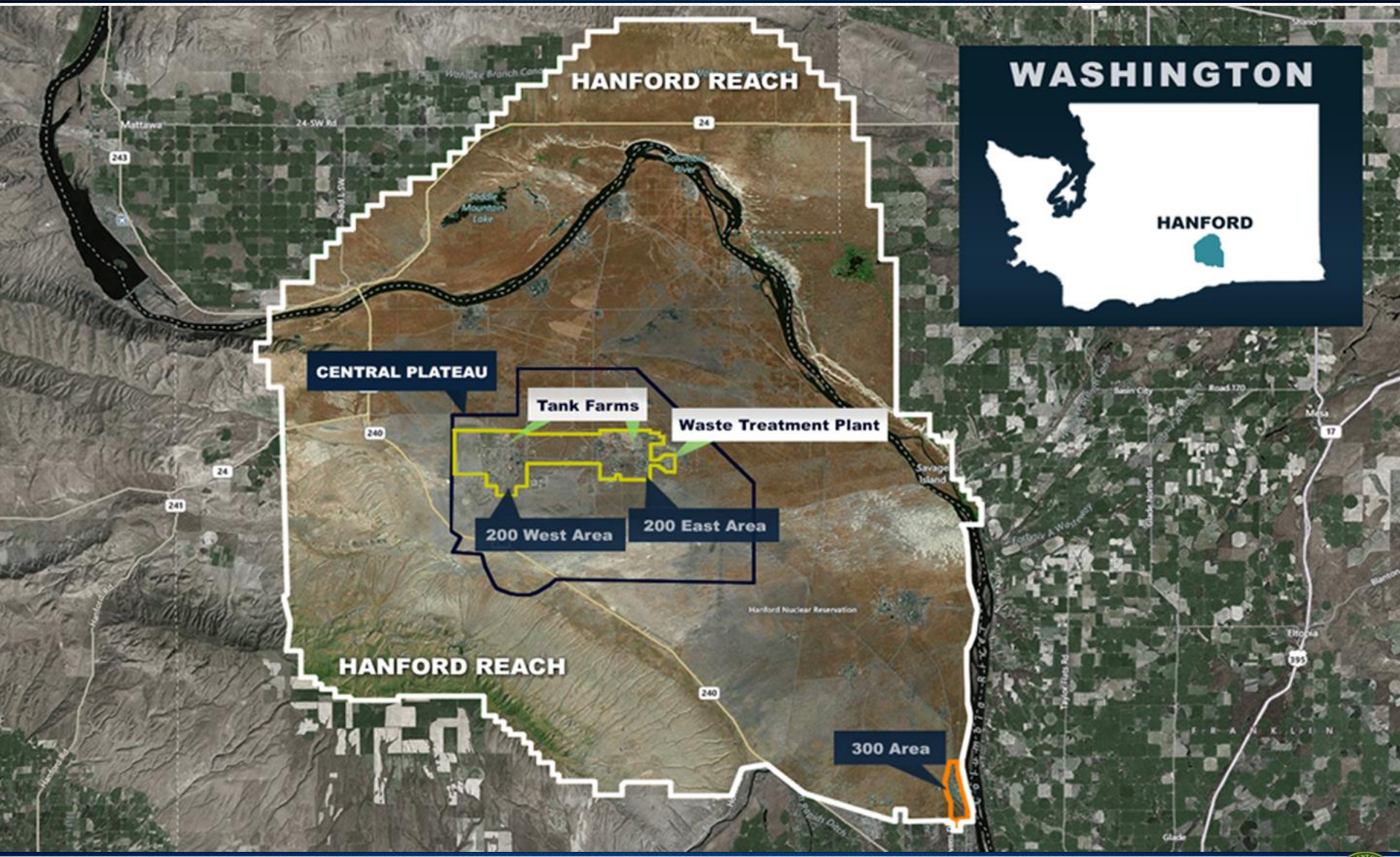
Bechtel National, Inc. (BNI)

BNI is responsible for the engineering, construction, startup and commissioning of the Waste Treatment Plant and Immobilization Plant. BNI has 2,864 employees*.

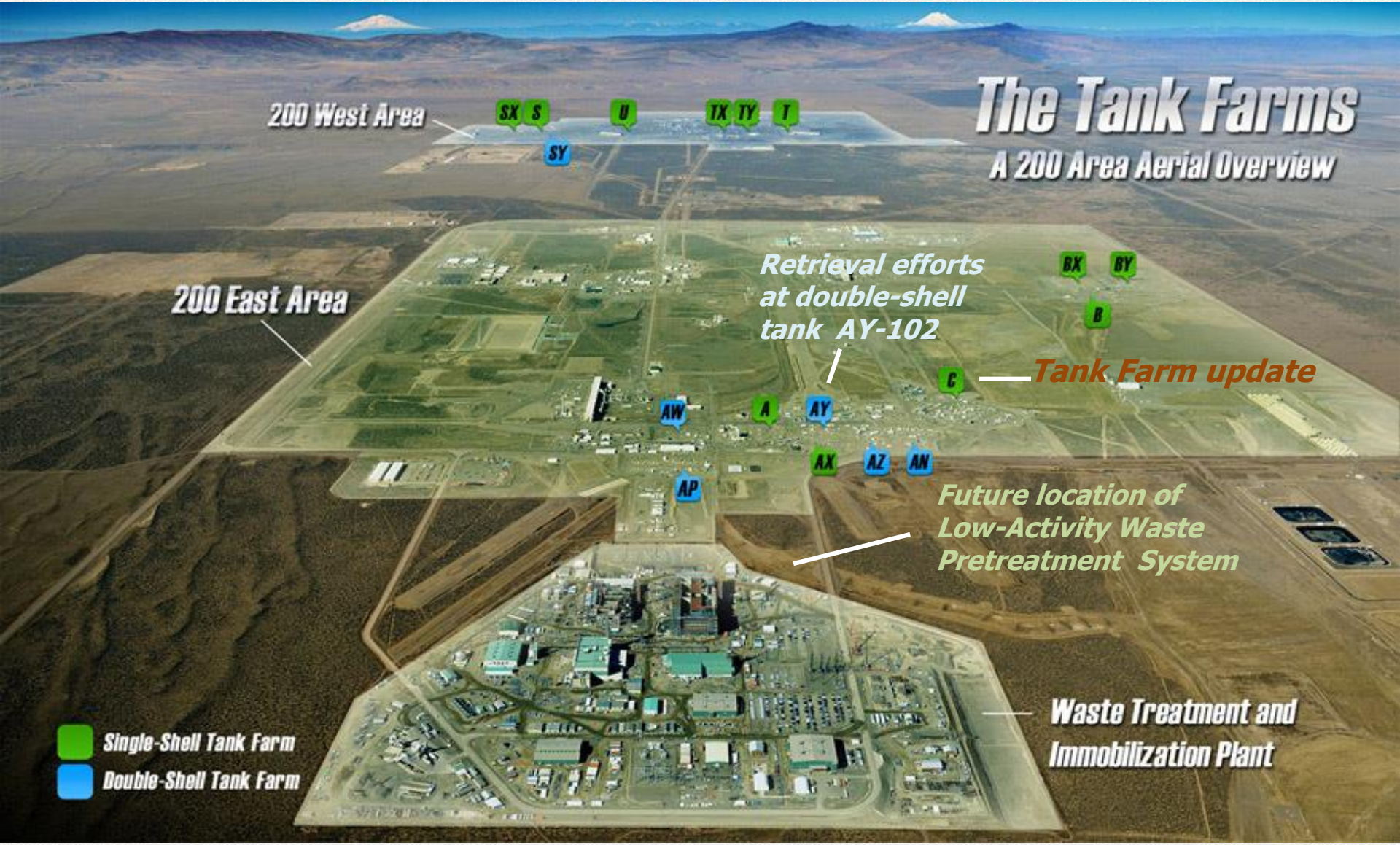
Wastren Advantage, Inc. (WAI)

WAI is the prime contractor responsible for managing the 222-S Laboratory.

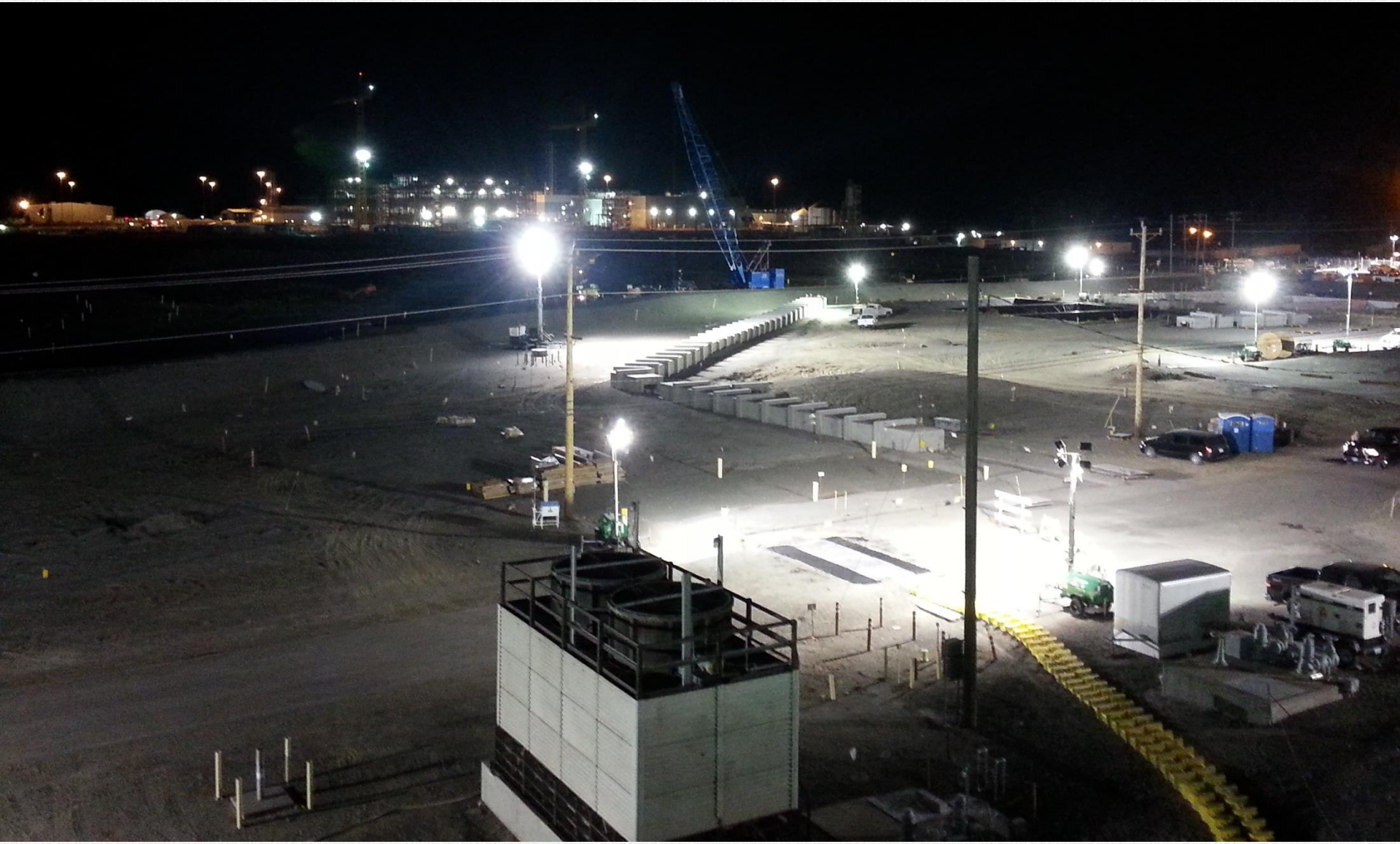
*As of July 2015


HANFORD REACH
WASHINGTON
HANFORD
CENTRAL PLATEAU
Tank Farms
Waste Treatment Plant
200 West Area
200 East Area
HANFORD REACH
300 Area

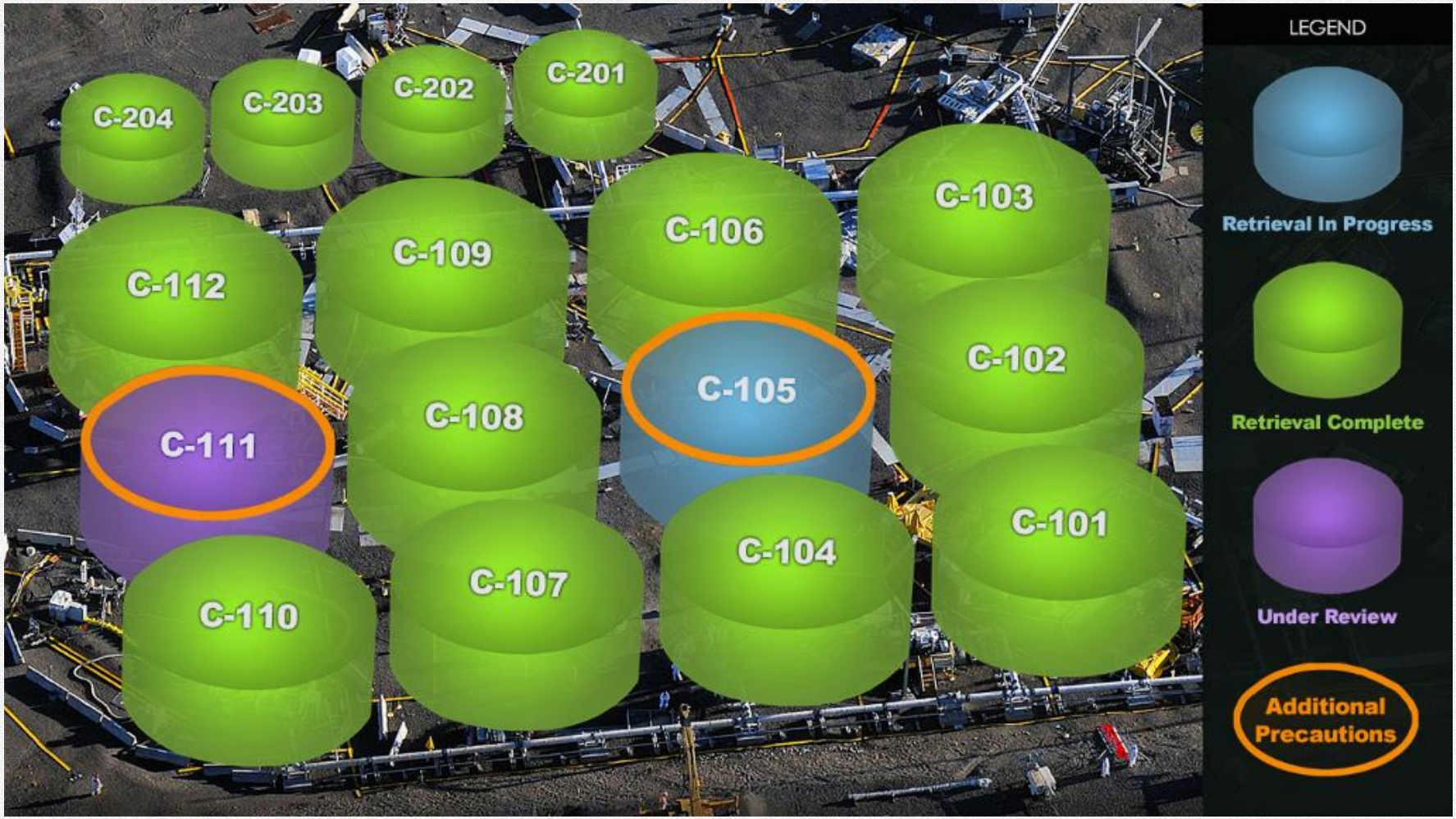
River Protection Project



Tank Farms Update



C-Farm Retrieval Status



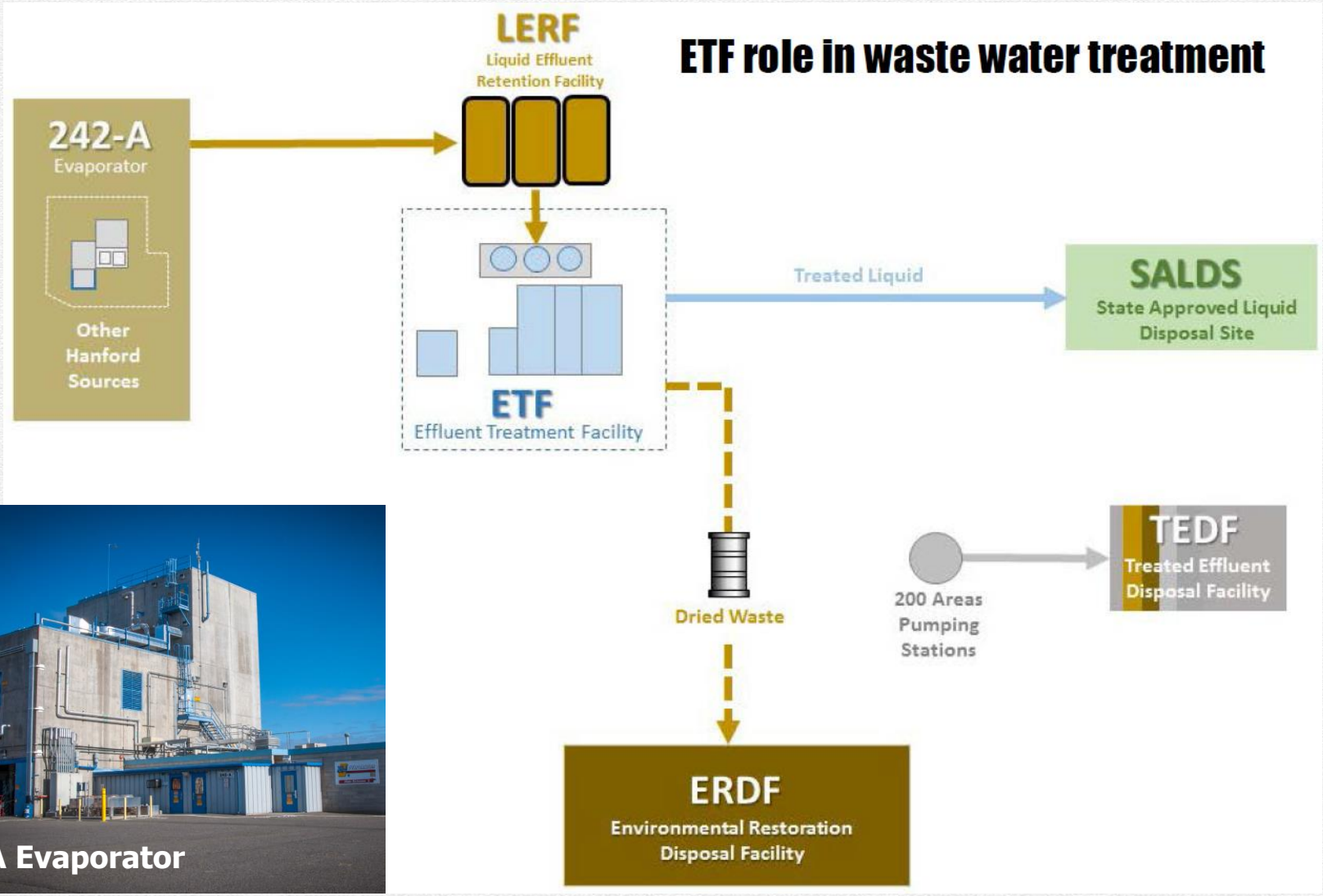
Waste Treatment and Immobilization Plant Update

Additional topics selected for Hanford Advisory Board

New Consent Decree Deadlines

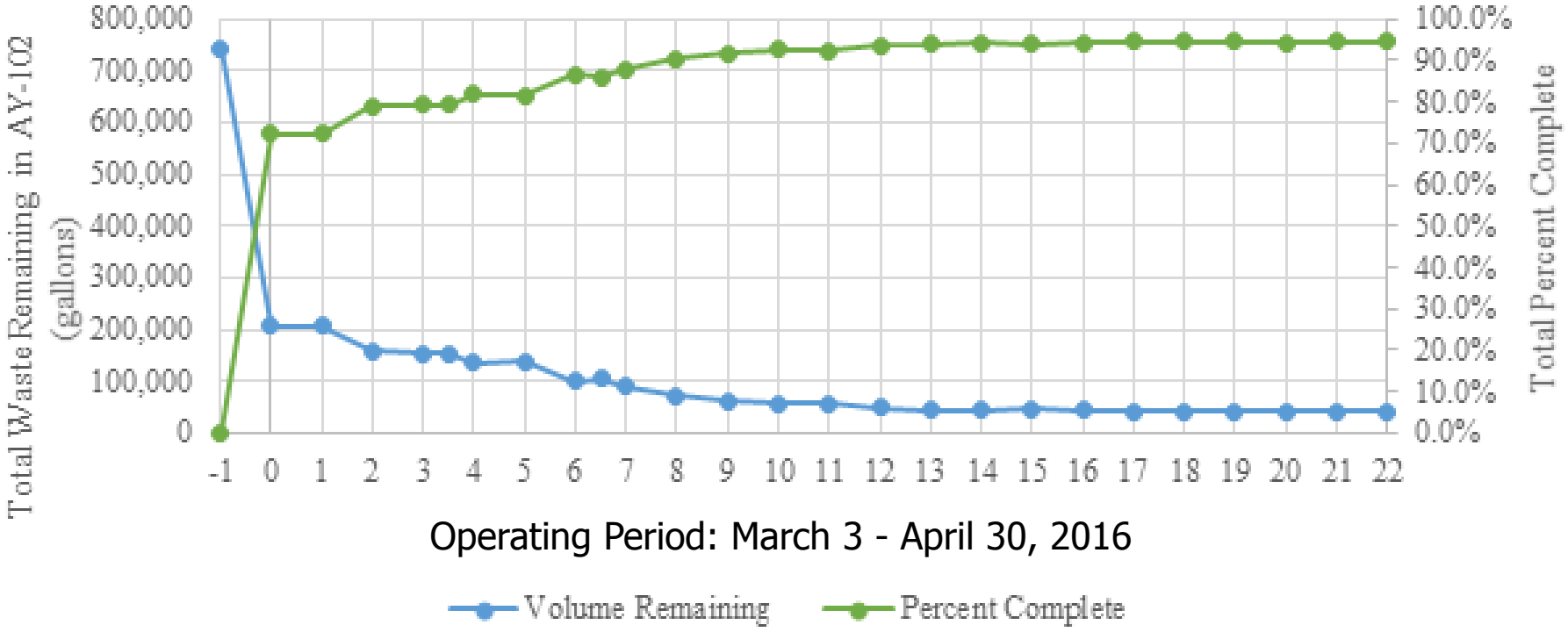
Milestones	2010 Consent Decree	2016 Consent Decree (Amended)
LAW Facility Construction Substantially Complete	12/31/2014	12/31/2020
Start LAW Facility Cold Commissioning	12/31/2018	12/31/2022
LAW Facility Hot Commissioning	12/31/2019	12/31/2023
Complete C Tank Farm retrievals	9/30/2014	3/31/2024
Complete retrievals from 9 additional SSTs	9/30/2022	3/31/2024
Pretreatment Facility Hot Commissioning	12/31/2019	12/31/2033
HLW Facility Hot Commissioning	12/31/2019	12/31/2033
WTP Hot Start	12/31/2019	12/31/2033
WTP Begin Initial Operations	12/31/2022	12/31/2036

Effluent Treatment Facility Restarts Operations



242-A Evaporator

AY-102 retrieval update



AY-101 monitoring results

Video inspection and air monitoring results from the AY-101 annulus show no indication of a leak in this tank

September 2014

April 2016

Technical Issues Progress

Testing of a half-scale pulse-jet mixer vessel for WTP has demonstrated the design is ready for full-scale testing

Technical Issues Progress

T1 Hydrogen Gas Events in Vessels	• Risk of combustion in the vessel headspace due to hydrogen accumulation • Develop operational strategy to prevent/mitigate hydrogen event
T2 Criticality in Pulse-Jet Mixer (PJM) Vessels	• 16 tanks may contain plutonium particles of size and density prone to settling • Resolve criticality issues in high solids vessels through analysis and testing
T3 Hydrogen in Piping and Ancillary Vessels	• Concern over a deflagration event occurring in piping and ancillary vessels • Develop piping design guide to mitigate and complete conceptual design for vessels based on quantitative risk assessment process
T4 PJM Vessel Mixing and Control	• Concern with adequacy of pulse-jet mixer (PJM) mixing and control system • Complete testing of standard high solids vessel prototype
T5 Erosion/Corrosion in Piping and Vessels	• Uncertainties exist in waste feed characteristics and ability to meet 40-year service life • Confirm erosion/corrosion design basis, including margin, through testing and analysis
T6 Design Redundancy/ In Service Inspection	• Perform failure modes, effects, and criticality analysis • Complete conceptual design of Planning Areas 2, 3, and 4 (black cell areas within Pretreatment [PT] Facility)
T7 Black Cell Vessel/ Equipment Structural Integrity	• Seismic ground motion criteria changed around 2005 • Complete structural analysis of standard vessel and strategy for structural upgrades to installed vessels
T8 Facility Ventilation/Process Off-Gas Treatment	• Multiple technical challenges associated with ventilation system, including HEPA filters • Complete engineering/nuclear safety assessments to ensure ventilation meets requirements

"Protecting our workers, the public, and the environment"

The Hanford Reach
White Bluffs Overlooking the Columbia River

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